

An hourglass-shaped graphic with a globe of the Earth inside. The top bulb is dark blue, and the bottom bulb is light blue. The central neck is a medium blue. The globe is centered within the hourglass, with the top bulb containing the upper half and the bottom bulb containing the lower half. The globe is rendered in a light blue color, matching the bottom bulb of the hourglass. The hourglass is set against a white background.

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*Historical Effective Marginal Tax Rates on Capital Income*

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**Abstract.** Effective marginal tax rates on investment are forward-looking estimates that project over the lifetime of an investment what share of the return will effectively be paid in taxes. These rates can differ significantly from average tax rates measured by dividing tax liability by income, because they are affected by timing. Effective tax rates fell from the early 1950s through the mid-1960s, rose until the early 1980s, and then dropped. They have stayed about the same until relatively recently, when they fell to an all-time low with bonus depreciation, relief of double tax on dividends, and lower marginal tax rates. The end of bonus depreciation and higher inflation rates increased the tax rates in the past two years.

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## Historical Effective Marginal Tax Rates on Capital Income

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### Summary

Effective marginal tax rates on investment are forward-looking estimates that project over the lifetime of an investment what share of the return will effectively be paid in taxes. These rates can differ significantly from average tax rates measured by dividing tax liability by income, because they are affected by timing. Effective tax rates fell from the early 1950s through the mid-1960s, rose until the early 1980s, and then dropped. They have stayed about the same until relatively recently, when they fell to an all-time low with bonus depreciation, relief of double tax on dividends, and lower marginal tax rates. The end of bonus depreciation and higher inflation rates increased the tax rates in the past two years. This report will be updated as warranted.

The tax rates which determine investment activity are marginal tax rates on new investment. They are calculated by projecting the path of a new investment and discounting the flow of income and taxes. They take into account the effects of statutory tax rates, depreciation rules, investment subsidies, and inflation. The method is to compare the internal rate that discounts the flow to the current value of investment with taxes (the after-tax return) and the rate without taxes (the pre-tax return); the difference between these rates divided by the pre-tax return is the effective tax rate.

**Table 1** shows the estimated tax rates from 1953 to 2005. Column 2 presents estimates of the corporate firm-level tax; if depreciation were allowed at economic rates and there were no subsidies, this rate would equal the corporate statutory tax rate. Column 3 reports estimates of the total rate on corporate investment, accounting for the deductibility of interest at the firm level and the taxation of interest, dividends, and capital gains at the individual level, as well as depreciation and subsidies. Column 4 presents the estimated rates for unincorporated business (proprietorships and partnerships). These business tax rates reflect investments in equipment, structures, and inventory. Column 5 presents estimated tax rates for owner-occupied housing, which is normally close to zero because of the exclusion of implicit net rent from income. Column 6 provides a weighted economy-wide tax rate.

**Table 1. Marginal Effective Tax Rates on Capital Income**  
(percent)

Year	Corporate Firm-Level	Corporate Total	Non-Corporate	Owner-Occupied	U.S. Total
1953	63%	70%	37%	-1%	58%
1954	50	57	23	-1	43
1955	51	58	24	-1	44
1956	53	60	25	-1	46
1957	55	61	27	-1	48
1958	55	61	26	1	47
1959	52	58	25	1	45
1960	49	55	23	1	42
1961	49	55	22	1	42
1962	42	48	17	1	35
1963	41	47	16	1	34
1964	38	44	14	0	31
1965	37	42	13	1	29
1966	37	42	14	1	30
1967	40	45	17	1	33
1968	44	50	20	3	37
1969	52	58	28	5	45
1970	48	54	26	5	42
1971	43	50	21	5	38
1972	44	51	21	5	38
1973	43	51	21	5	38
1974	48	55	25	7	42
1975	51	56	27	11	44
1976	46	53	23	7	40
1977	41	49	23	6	40
1978	50	58	26	10	46
1979	47	57	29	11	45

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Year	Corporate Firm-Level	Corporate Total	Non-Corporate	Owner-Occupied	U.S. Total
1980	51	60	33	15	48
1981	37	48	24	12	38
1982	35	43	22	9	35
1983	39	46	20	8	34
1984	38	44	20	7	33
1985	38	44	20	7	33
1986	38	45	19	6	33
1987	35	44	22	4	33
1988	35	43	22	4	33
1989	34	43	22	4	33
1990	33	42	22	3	31
1991	32	41	22	3	30
1992	32	41	22	3	30
1993	33	42	22	2	31
1994	32	41	22	2	30
1995	32	42	22	2	31
1996	32	42	22	2	31
1997	31	41	23	2	31
1998	31	41	22	2	30
1999	30	40	23	2	30
2000	31	41	23	2	31
2001	32	41	22	2	30
2002	30	39	21	2	29
2003	27	32	18	2	23
2004	30	35	21	2	26
2005	34	41	23	2	30

**Source:** See text for method of calculation.

As shown in **Table 1**, tax rates for business investment fell from the early 1950s to the mid-1960s, reflecting more accelerated depreciation, investment credits, and lower statutory tax rates. Rates rose towards the end of the 1960s with the repeal of the investment credit, which was restored in 1971 and led to lower rates. Rates then began to rise in the mid-1970s as inflation resulted in a smaller value of depreciation deductions by firms; inflation also caused the penalty for not deducting mortgage interest for non-itemizers to become more severe. Increases in depreciation and lower rates adopted in 1981, which were followed by more restrictive depreciation but lower corporate and individual rates in 1986 and slowing inflation, led to lower tax rates in the 1980s and 1990s. The most recent reductions in tax rates arose from the lower tax rates adopted in the 2001-2003 legislation, the adoption of bonus depreciation in 2002 which was expanded in 2003, and the lower rates on dividends and capital gains adopted in 2003. These changes resulted in a historically low tax rate.<sup>1</sup> The tax rate rose in 2004 due to higher inflation rates, and rose again in 2005 due to the end of bonus depreciation. Lower rates on capital gains are technically temporary (expiring in 2010), but may be made permanent.

The tax rates in **Table 1** do not account for the tax benefits to investments through pensions and individual retirement accounts (where tax rates are generally effectively zero); about half of passive income (interest, dividends, and capital gains on stock) is received in tax exempt form. These provisions affect marginal tax rates only if they affect the return to the marginal saving decision. Many investments in these forms are made up to the maximum contribution limit, many pension plans are not under individual control, and even where investments are not at the limit all marginal investments may still not flow through the tax-favored account. All of these factors suggest not including these tax benefits in marginal calculations. However, there is probably some marginal effect, and if the individual income tax rate on these passive forms of income is set to one half of its value to reflect the share of non-taxed investment returns, tax rates would be reduced substantially — by about eight percentage points without the lower rates (particularly on dividends and capital gains) enacted recently; about six percentage points otherwise.<sup>2</sup>

## Methodology for Calculating Effective Tax Rates

The basic formula for calculating the effective tax rate is  $(r - R) / r$ , where  $r$  is the pre-tax return, or internal discount rate for an investment with no taxes, and  $R$  is the after-tax discount rate that discounts all flows to the cost of the investment with taxes.

For a business depreciable investment, the relationship between  $r$  and  $R$ , with  $R$  the firm's discount rate, derived from an investment with geometric depreciation and continuous time, is the standard formula:

$$(1) r = (R + \delta)(1 - uz - k(1 - auz)) / (1 - u) - \delta$$

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<sup>1</sup> For a more detailed discussion of the recent tax revisions, see CRS Report RL32099, *Capital Income Tax Revisions and Effective Tax Rates*, by Jane G. Gravelle.

<sup>2</sup> See discussion in CRS Report RL32099.

where  $u$  is the firm's statutory tax rate (either the individual or corporate rate),  $\delta$  is the economic depreciation rate,  $z$  is the present discounted value of depreciation deductions,  $k$  is the investment tax credit, and  $a$  is a determinant of the basis adjustment, set at one, 0.5, and zero if there is a full basis adjustment (i.e. depreciation allowed only on cost net of the credit), half basis adjustment, or no basis adjustment respectively.

The formula in (1) is applied to obtain firm-level tax rates (the firm-level corporate rate in column 2 and the non-corporate rate in column 4), with  $R$  a weighted average of the after-tax real interest rate  $(i(1-u) - \pi)$  where  $I$  is the interest rate and  $\pi$  is the inflation rate and the required real return on equity before individual tax. Debt is weighted one-third. In the case of total corporate tax rates in column 3, the pre-tax return  $R$  is derived from equation (1) but is compared with the return after personal taxes to individuals (the same discount rate used for non-corporate business), a weighted average of the after-tax real return on debt  $(i(1-t) - \pi)$ , where  $t$  is the individual tax rate, and the after-tax return on corporate equity (which is net of taxes on capital gains and dividends). In the case of the firm level corporate tax rate in the second column of **Table 1**,  $R$  is the discount rate of the corporate firm (before personal level taxes).

The tax rate for owner-occupied housing omits the effect of depreciation and taxes on profit — the pre tax return is simply  $R + f(1-n)t - ntp$ , where  $f$  is the debt share,  $n$  is the share of investments with individuals who itemize on their tax returns,  $p$  is the property tax rate, and  $R$  is the after-tax discount rate. If all mortgage interest deductions were allowed, but no property tax deductions, the tax rate would be zero because there is no tax on the imputed net rent. A slight positive or negative tax may arise because of the inability to deduct mortgage interest by non-itemizers and the ability to deduct property taxes by itemizers.

The mathematical formulas and assumptions used to calculate tax rates, including depreciation methods and lives, investment credits, inflation rates, and statutory tax rates, as well as the tax rates themselves for 1953-1989, can be found in Jane G. Gravelle, *The Economic Effects of Taxing Capital Income*, Cambridge: MIT Press, 1994, Appendix B, pp. 287-301. The statutory tax rates, interest and inflation rates for 1953-1989 are in Table 2.1, p. 20.<sup>3</sup>

Tax rates for 1990-2005 incorporate a number of assumptions and tax law changes. These include the increase in the tax life for structures from 31.5 to 39 years in 1993, the lowering of the capital gains tax rate to 20% in 1997, the introduction of bonus depreciation (expensing of a share of investment) at 30% for 2002 and 50% for 2003 and 2004, and the reduction in the tax rate for capital gains and dividends from 20% and the regular tax rate respectively to 15%. Individual and corporate statutory tax rates and inflation and interest rates are reported in **Table 2** for 1990-2005. The pattern of change in individual tax rates is based on the rate reported for the NBER simulation model, which can be found at [<http://www.nber.org/~taxsim/mrates/mrates3.html>], visited November

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<sup>3</sup> Note that this table inadvertently reports the values for 1959, in the row for 1960, and omits the 1960 values of 28, 52, 2.0, and 5.2 for the individual tax rate, corporate tax rate, inflation rate and interest rate.

20, 2003. Tax rates are assumed to continue at the current year's rate; slightly lower rates would occur for 2001 and 2002 if the permanent long term rates enacted in 2001 were assumed, although rates might also rise due to real bracket creep as well. Inflation rates are a 1/3 weight of the prior year and a two-thirds weight of the current year. The interest rate is the Baa Bond rate.

**Table 2. Tax, Inflation, and Interest Rates Used to Calculate  
1990-2005 Tax Rates in Table 1**  
(percent)

Year	Individual Tax Rate	Corporate Tax Rate	Inflation Rate	Interest Rate
1990	23%	34%	4.2%	10.3%
1991	23	34	4.1	9.8
1992	23	34	3.2	9.0
1993	24	35	2.7	7.9
1994	24	35	2.4	8.6
1995	25	35	2.4	8.2
1996	25	35	2.3	8.0
1997	26	35	1.9	7.9
1998	26	35	1.4	7.2
1999	27	35	1.5	7.9
2000	26	35	1.9	8.4
2001	25	35	2.3	8.0
2002	25	35	1.8	7.8
2003	24	35	1.6	6.8
2004	24	35	3.4	6.4
2005	23	35	3.4	6.1

**Source:** See text.